

U.S.S.N. 10/824,730

Filed: April 15, 2004

PRELIMINARY AMENDMENT**In the Claims**

Claims 1-9. (Canceled).

10. (Currently amended) A polypropylene web comprising ~~an~~ a perforated extruded sheet comprising a propylene polymer comprising beta-spherulites in an amount sufficient to produce a K-value of about 0.2 to 0.95 when measured by x-ray diffraction or to show a beta crystalline melting peak during the first or second heating scan when measured using a differential scanning calorimeter.

11. (Currently amended) A method for making a polypropylene web, comprising

~~(a) melt forming a polymeric sheet, comprising a resinous polypropylene polymer and a beta-nucleating agent,~~

(a) feeding a concentrate and a resinous polypropylene polymer to an extruder to melt form a polymeric sheet, wherein the concentrate comprises a polypropylene resin and a beta-nucleating agent, wherein the beta-nucleating agent is present in a concentration in a range of 1.2% to 0.036% by weight of the total polymer content or between 12,000 and 360 ppm,

(b) quenching the polymeric sheet at a quench temperature sufficient to produce a polypropylene sheet comprising beta-spherulites in an amount sufficient to produce a K-value of about 0.2 to 0.95 when measured by x-ray diffraction or to show a beta crystalline melting peak during the first or second heating scan when measured using a differential scanning calorimeter,

(c) extruding the quenched sheet,

(d) perforating the extruded sheet, and

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(e) orienting the perforated sheet uniaxially or biaxially, wherein the orienting step comprises heating the perforated sheet to a temperature less than or equal to 155 °C.

12. (Currently amended) ~~A biaxially oriented~~ The polypropylene web made from an extruded sheet comprising a propylene polymer comprising beta spherulites in an amount sufficient to produce a K-value of about 0.2 to 0.95 when measured by x-ray diffraction or to show a beta crystalline melting peak during the first or second heating scan when measured using a differential scanning calorimeter, of claim 10, wherein the web is biaxially oriented and wherein the web has thickness in the node junction region between the machine direction and transverse direction strands that is at least 10% less than that of a biaxially oriented web made from an extruded sheet with no added beta nucleant and the same starting sheet thickness.

13. (Original) The web of claim 12, wherein the extruded sheet can be run at line speeds that are at least 5% faster than the line speeds for an extruded polypropylene sheet with no added beta nucleant and the same starting thickness.

14. (Original) The web of claim 12, wherein the web has a tensile strength measured at 2% elongation in the machine direction, that is at least 10% higher than that of a biaxially oriented web made from an extruded polypropylene sheet with no added beta nucleant and the same starting thickness.

15. (Original) The web of claim 12, wherein the web has a tensile strength measured at 5% elongation in the machine direction, that is at least 10% higher than that of a biaxially

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oriented web made from an extruded polypropylene sheet with no added beta nucleant and the same starting thickness.

16. (Original) The web of claim 12, wherein the web has a torsional rigidity that is at least 10% higher than that of a biaxially oriented web made from an extruded polypropylene sheet with no added beta nucleant and the same starting thickness.

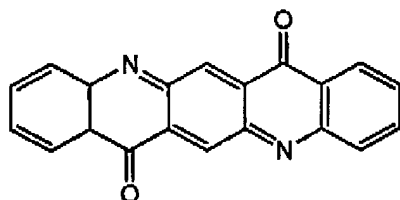
17. (New) A concentrate comprising a polypropylene resin and a beta-nucleating agent, wherein the beta-nucleating agent is present in a concentration in a range of 1.2% to 0.036% by weight of the total polymer content or between 12,000 and 360 ppm.

18. (New) The concentrate of claim 17 wherein the beta-nucleating agent is present in a concentration of 0.047% by weight of the total polymer content or 470 ppm.

19. (New) The concentrate of claim 17 wherein the polypropylene is selected from the group consisting of polypropylene homopolymer and copolymers of polypropylene containing other alpha-olefin monomers.

20. (New) The concentrate of claim 17 in the form of a pellet.

21. (New) The concentrate of claim 17 beta-nucleating agent has the structural formula:



22. (New) The concentrate of claim 17 further comprising an additive selected from the group consisting of lubricants, antioxidants, ultraviolet absorbers, radiation resistance agents,

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antiblocking agents, antistatic agents, coloring agents, and opacifiers, which do not nucleate the alpha crystal form of polypropylene.

23. (New) The method of claim 11, wherein step (a) further comprises feeding to the extruder an additive selected from the group consisting of lubricants, antioxidants, ultraviolet absorbers, radiation resistance agents, antiblocking agents, antistatic agents, coloring agents, and opacifiers, which do not nucleate the alpha crystal form of polypropylene.

24. (New) The method of claim 11, wherein step (e) comprises stretching the perforated sheet at a higher drawing rate relative drawing rate used to stretch a perforated polypropylene sheet with no added beta nucleant and the same starting thickness.